

1. The deposition chamber, given the other specifications, can vary widely in size. As the number and size of samples, and desired uniformity both impact the design, we would like to know if: a) a minimally small chamber about 12" diameter, or b) a medium sized one, perhaps 20", or c) something else is envisioned. We have made these primarily in smaller sizes. The size definitely impacts the price.

The deposition chamber should be a stainless steel front loading vacuum chamber with an internal dimension of 400 millimeters.

2. All of the OLED deposition systems we have made have been required to mate with a controlled atmosphere environment, usually a glove box, as the materials are sensitive to air. Is this not the case here, or are you expecting an unspecified glove box as well? We have also recently completed a stand alone system for future integration with a glove box.

NRL is not planning on mating the deposition system with a glove box at this time.

3. Regarding the number of power supplies, although three sources are specified, it is not clear whether or not there will be any co-depositions requiring more than one power supply. If this is the case, modification must also be made to the rate monitor, as a simple monitor can only observe one source.

NRL is not planning on doing co-depositions, but all three sources should have their own power supplies.

4. It is assumed that the evaporation process will be under manual control, using the rate monitor for endpointing with a shutter, or shutters only. That is, the process part is not automated along with the vacuum controls. Is this correct?

The shutter should be electromagnetically controlled from the equipment rack.

5. Regarding solenoid valves, it is understood that the user wants no compressed air, and positive shutoff in case of a power failure. The high vacuum valve, however, for the specified cryo-pump, will be larger (6 to 8" nominal) than that possible with a conventional commercial solenoid valve. It could be done with a motor driven valve, and 24V battery backup. In any case, there should be no need for this function, as the system should not ever be in a state where a power outage would require closing the high vacuum valve. The chamber roughing and cryo roughing valves, yes. Can the user explain?

NRL does not want the vacuum system to vent to atmospheric pressure in the case of a power failure.

6. Critical to this design is the type of "low temperature organic vapor sources". There are literally dozens of designs available. Are there any preferences as to specification, including charging load ? Crucible materials?

The low temperature sources should be Kurt J. Lesker Model No. LTE 11000 low temperature evaporators or equivalent with 1 cc alumina crucibles.